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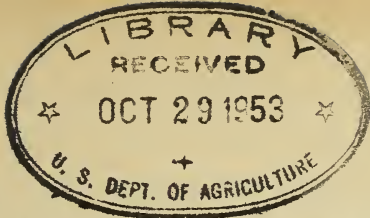


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SPECIAL.

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WINTER WHEAT IN THE COTTON BELT.

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GENERAL CONSIDERATIONS.

Under present conditions in the cotton belt the wheat crop will prove advantageous in many sections. Whether wheat should be grown at this time may depend on other factors than the suitability of the soil or climate for growing wheat. In some places suitable machinery is not at hand for properly sowing, harvesting, and thrashing this crop. If oats or barley are grown at present, the machinery used for these crops can be readily used for wheat; but if no such cereals are grown, the necessary machinery will have to be provided for properly handling the crop. The disposition of the grain after it is produced must also have consideration. Wheat may be used for feed, but corn or barley is likely to be better suited for this purpose, except perhaps for chickens. The chief use of wheat is for bread, and unless it can be ground into flour in a mill near at hand or can be shipped to a market, some other crop should be grown. An isolated wheat grower, unless he produces a carload or more, will find it difficult or unprofitable to ship the grain produced. A few persons in each community, however, may profitably grow wheat with the object of supplying seed to their neighbors, should the general sowing of wheat the following year appear probable.

Wheat is a good crop for winter pasture, but is probably not so good for this purpose as rye, except perhaps on the heavier clay soils. Rye is much better on the sandy soils. Wheat can be pastured more closely without apparent injury than can oats or barley. If wheat is to be cut for grain, however, it should not be pastured late in the spring or when the land is muddy. As a grain crop, wheat is generally superior to rye in the value of the crop produced, except on lighter soils. As a hay crop, wheat is inferior to oats.

According to data obtained by the United States Department of Agriculture for 1909 the average cost per acre of producing wheat in the cotton belt is \$1.13 less than the cost for corn, but \$1.09 more

NOTE.—Intended for farmers in the cotton belt who desire to diversify their farming because of the economic crisis which adversely affects the cotton crop at this time.

than the cost for oats. The excess of value of the grain produced over the cost of producing the crop is greatest for corn and least for wheat when these three crops are compared. An enhanced price of wheat, however, will result in greater returns from the crop. More attention to wheat production on the part of farmers in general may also result in making the wheat crop as valuable in certain sections of the South as in any part of the country.

SOILS ADAPTED TO WHEAT.

Much of the well-drained loam, silt-loam, clay-loam, and some of the clay soils can doubtless be used profitably for wheat growing. Sandy soils and heavy, poorly drained clay soils are not so suitable. The coastal plains of the Gulf and of the Atlantic are not likely to return profitable wheat crops, and in at least all of the peninsular portion of Florida wheat growing should not be attempted. The Piedmont Plateau, however, contains much good wheat land.

Wheat should not be sown on land the drainage of which is poor. If the land is subject to overflow, or if water stands on it after rains, wheat should not be sown, for the plants will not live and thrive on such land. Low places in fields can often be drained sufficiently to prevent injury from standing water by opening furrows in the direction of the natural slope. A soil to be good for wheat should contain plenty of vegetable matter and plant food and should not be acid.

PREPARATION OF THE SEED BED AND SOWING THE SEED.

When wheat follows a cultivated crop, such as corn or cotton, the soil can usually be prepared for seeding by going over it one or more times with a disk harrow and then harrowing thoroughly with an ordinary harrow. If weeds are plentiful, plowing 3 or 4 inches deep may be necessary, but will take more time. Harrowing with an ordinary harrow should follow the plowing. After a good seed bed is thus prepared, the seed should be sown about $1\frac{1}{2}$ inches deep with a grain drill if such an implement is available. The same drill that is used for seeding oats or barley can be used for wheat. A disk drill is preferable where weeds and trash cover the land, since clogging the drill by such material is less likely than in case a hoe or shoe drill is used. On clean land, however, any kind of a drill may be used. By the use of a drill the seed is more uniformly covered and is more likely to be placed in contact with moist soil, where it will germinate readily.

If for any reason the farmer can not prepare the soil in good time for sowing wheat or does not have the implements named above, fairly good results will often be obtained by more simple methods.

The land which has grown a cultivated crop the previous summer may be harrowed with a heavy harrow, going over it as many times as necessary to secure a fine, mellow seed bed. The wheat may be sown broadcast over the field from a 2-bushel bag slung over the shoulder and under one arm, at the rate of 6 or 7 pecks per acre. The sown seed should then be covered by harrowing with an ordinary harrow. The use of broadcast seeders would lighten this labor, but such implements are almost unknown in the South. The man sowing the grain saves much labor and can sow more evenly and rapidly if he scatters the seed while standing or sitting in the rear end of a wagon being drawn slowly back and forth across the field.

When wheat follows other than a cultivated crop, the plowing of the land is necessary. The land should be plowed to a depth of about 7 inches several weeks before seeding. It should then be harrowed at once and worked down with harrow, disk, drag, or roller in such a manner as to kill all weeds that start to grow and to settle the subsoil and prepare a fine, mellow seed bed 2 or 3 inches deep. When it is necessary to plow just before seeding, as when a catch crop of cowpeas is plowed under, the soil should be compacted by rolling and harrowing several times before seeding, after which seeding should be carried on as outlined above.

TIME OF SOWING WHEAT.

Wheat can be sown in the States bordering on the Gulf over a rather long period, extending from about the middle of October to the latter part of January. The best time for seeding is about November 1 in the northern part of these States, and November 15 in the central part.

A good growth of the plant is necessary before cold weather begins, yet if the plant becomes jointed injury from freezing may result. If seeding is delayed until very late in the winter sufficient winter growth is not secured, and hot weather may cut short the growth and yields be reduced or entirely suppressed.

VARIETIES.

A variety that has been grown locally for several years and that has become adapted to the locality is generally the best. The soft red winter wheats are best adapted. Beardless, smooth chaffed varieties, such as Fultz, Purple Straw, Bluestem (not the Spring Bluestem), Georgia Red, Golden Chaff, and Currell, or bearded, smooth chaffed varieties, such as Fulcaster, Dietz, and Red Wonder, may be grown with the greatest chance for success. The hard red winter wheats, such as Turkey and Kharkof, should not be sown in the South.

PREPARATION AND SOURCES OF SEED.

Broken, immature, and shriveled grains, weed seeds, and all foreign material should be removed by fanning and grading the seed before it is sown. The fanning mill will also remove smut balls and many grains affected by scab, as these are lighter than the sound grain.

Where stinking smut is present and time allows, seed wheat should be treated with a solution of commercial formalin in water. Commercial formalin may be bought by the pint or in bulk from a druggist at a cost of 50 cents to \$1 per pound, and 1 pound will treat 25 to 50 bushels of grain. This formalin is mixed with water at the rate of 1 pound of formalin to 45 gallons of water. All smut balls should first be removed from the wheat by fanning or otherwise. The seed should then be placed on a clean floor or canvas, in a pile or layer several inches thick. It is then sprinkled with the formalin solution by means of an ordinary sprinkling can and is shoveled over and over until every kernel is thoroughly wet. The grain is then placed in a pile and covered with sacks or other covering for two hours or over night. It is then dried sufficiently to run through the drills, after which it may be sown. If sown immediately, considerably more should usually be sown to the acre, as the water absorbed has caused the grain to swell. After treating the seed with formalin, reinfection should be avoided by the use of bags, bins, and implements that are free from the disease germs, treating these also with formalin if necessary. This formalin treatment will also very materially check the disease known as anthracnose, which attacks the lower portion of the stems and causes the leaf sheaths to become blackened.

Reliable seed dealers can generally furnish good wheat seed, or, better still, good seed can often be obtained of a local grower. In many cases the sources of good seed can be furnished by the officers of the State experiment stations.

RATE OF SEEDING.

The quantity of seed that should be sown under ordinary conditions in the cotton belt is 6 pecks per acre. This may be varied according to the size of kernel of the variety used, the condition of the seed bed, the fertility and character of the soil, and the date of seeding. When a drill is used for sowing and the grains are small, the seed bed in good condition, the soil rich, warm, and well drained, and the seeding early, 5 or even 4 pecks per acre are often sufficient. When the seed is sown broadcast and opposite conditions exist, 7

or 8 pecks may give more profitable results. It is advisable to adhere to these rules with all varieties, regardless of any claims of exceptional tillering ability that may be made.

PASTURING AND MOWING.

It frequently happens in the Southern States that an overabundance of foliage is produced in the fall, and danger of winter injury is increased thereby. It is often advisable under these conditions to mow off the plants in the fall or pasture moderately. As growing wheat is an excellent feed, it is more profitable to dispose of the excess growth in the late fall or early spring by pasturing. However, excessive pasturing at any time, pasturing when the soil is wet, and late spring pasturing are very injurious and should be entirely avoided. The amount of lodging is probably reduced by judicious mowing or pasturing.

WHEAT AS A NURSE AND COVER CROP.

Winter wheat as a nurse crop in the South is inferior to winter barley, but superior to winter oats. A good stand of wheat is also a valuable cover crop, preventing the washing of the soil and the leaching out and loss of plant food and fertilizers.

FERTILIZERS.

If the soil is acid, it should be limed with from 1,000 to 1,500 pounds of slaked lime per acre before it is used for wheat. Lime is easily applied through the grain drill several weeks before the seed is sown. It may also be scattered over the surface with a shovel and harrowed in. Most of the older agricultural soils are benefited by an application of lime. There are, however, some limestone soils in central Alabama, northeastern Mississippi, and Texas which without lime are suitable for wheat if sufficient vegetable matter is incorporated in the soil. Nitrogen should generally be added by growing legumes, such as cowpeas or soy beans or the clovers. Phosphorus is generally deficient in southern soils.

For soils that are not known to be in a good state of fertility for wheat the following application of fertilizer per acre should be generally profitable:

Lime, 1,000 to 1,500 pounds, applied two or three weeks before sowing.

Acid phosphate, 200 pounds; potash salts, 25 to 50 pounds; nitrate of soda, 25 pounds, applied when the seed is sown.

Nitrate of soda, 50 to 75 pounds, applied after growth starts in the spring, generally early in March.

RUST.

The disease most injurious to wheat and the factor that will probably limit yields most in the Southern States is rust. This affects both stems and leaves, reddish and black spots forming on these parts. Its development is favored by dampness and heat. It is most destructive on low, damp land. Early-ripening varieties will generally be less affected than are late varieties. There are no rust-proof varieties, but some are more resistant than others. Sowing on fertile, well-drained uplands and the use of early varieties are the most successful methods of combating the disease.

